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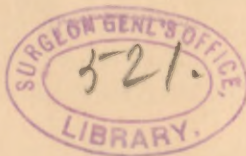
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THE FUNDAMENTAL CONDITIONS OF PUBLIC HEALTH IN CIVILIZATION.

By GEO. HOMAN, M. D.,

PROFESSOR OF HYGIENE AND FORENSIC MEDICINE IN THE MEDICAL DEPARTMENT
OF WASHINGTON UNIVERSITY, ST. LOUIS; MEMBER STATE
BOARD OF HEALTH OF MISSOURI.

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Preliminary to the consideration proper of the subject indicated by the above title, I deem it well to say that I shall deal with man simply as a product of evolution—assuming, as he stands now in his highest estate, that he represents the fruitage of the operation of developmental forces through uncounted ages; my view of the story of Genesis being that it merely refers to that point in time and evolutionary change when there was developed in the man-like animal that which conclusively differentiated him from the brute—by whatsoever name or criterion it may be known or adjudged—as reason, conscience, moral nature, or, as scripture has it, “and man became a living soul.”

As the race emerged from the anthropoid state into the conditions of primitive man and he appears dimly distinguishable through the mists that obscure the dawn of history, co-eval with his coming were the beginnings of rational or intelligent hygiene as contrasted with natural or instinctive hygiene, whose many marked manifestations are observable among the lower animals to-day.

It may well be supposed that the unique beings who represented man in his earliest state, and who perhaps gained a precarious subsistence by fishing and the chase, made no conscious application in their lives of any sanitary rule or measure; but as man progressed in his upward course and passed successively from the low savage to the pastoral condition, and then to the agricultural stage, and from that again to the manufacturing state, and finally developed into the commercial stage, reaching the status of civilized and enlightened man, the evolution of hygiene went on, and its more or less perfect application to the concerns of everyday life and living became a necessity in proportion as the members of the race came together in fixed habitations in the family, the community, and the city.

As nearly as it is now possible to approximate the facts in this regard, it was not until mankind became aggregated into large communities in the course of development on a considerable scale of manufactures and

commerce, or when the military necessity for walled cities arose, that conditions were brought about, out of which were begotten communicable diseases, pandemic in purpose, dominion, and power, and which, in their extended sweep, have whitened the earth with the bones of unnumbered multitudes of victims.

Asiatic cholera well illustrates a type of persisting pestilence, originating in the far distant past, in sub-tropical regions, with the concomitants of dense population, climatic moisture, and filth, the presence and peculiarity of the latter being in definite relation to certain social customs and religious beliefs of the inhabitants; and the native vigor of the specific organism on which this form of disease depends is such that it has not only more than once passed around the earth in the equatorial belt, but has invaded the temperate zones to their farthest edge, and, through its ravages, has left behind a name that is at once a dread memory and a menace to mankind.

It has been the wont of uninformed men to regard these morbid or epidemic occurrences as being due to supernatural power, divine or diabolical, as the fear, fervor, fancy, or fanaticism of persons or people affected might dictate; but modern science, working along the line of microscopic research, has furnished the explanation of the causes of most of the grave diseases which affect mankind, and it is known that the growth of a crop of cholera or consumption is the result of just as orderly natural processes as the production of a crop of cabbages or corn. It has succeeded in isolating and identifying the principal bacterial parasites, which possess power to destroy health and life; and while by far the larger number of the known varieties of these low forms of life are not only harmless to man, but play an indispensable role in the operations of life-giving nature, it has been shown that under certain conditions some of them lose their benign nature and take on the destructive powers which mark certain forms of disease.

Long-continued observations of human populations have all tended to show that, given certain conditions in a crowded city—the chief of which are darkness, dampness, and dirt,—well defined forms of disease will surely be developed there; and, if these be communicable in their nature, that such localities will constitute centres from which disease will be radiated to the surrounding people as the rays proceed from a lighted candle. In public health language they are known as plague spots, fever nests, hot-beds of infection, centres of contagion, and the like; and, if “far that little candle throws his beams,” who can calculate the distance to which disease may be projected from such sources.

The questions at once arise, Why will people consent to live in such localities, when the danger of sickness and death is so great? and, Why will the surrounding people, secondarily exposed to such dangers, consent to or tolerate their continuance? and these questions go to the very core of the whole matter and touch the underlying causes from which spring the monstrous, unnatural effects and conditions which we see in the midst of the so called Christian civilization of to-day.

The true position of man in nature, so far as his physical health is concerned, may be most clearly understood by regarding him simply as a land animal—as the highest type of land animal,—and his wants as such are anticipated and met by the provisions of nature, of land on and from which to live, the air to breathe, sunlight to enable him to see, etc.

By the gasp and cry which signal the entrance of air into its lungs and the arrival of a new-born child in the world, whether it come of prince or pauper, there is established of natural right an indefeasible title to a portion of air equal to that of any other living child, so long as the necessity for air shall continue. If proof of this be needed, let the lungs of two men, one a hereditary noble and the other a day laborer, be submitted to the most profound naturalist, anatomist, chemist, or histologist, and, though ever so skilled, they could not, by their tests, determine and say, "This infallibly came from that certain body." Or let the visual organs of two such persons be placed before the most expert oculist or optician, and they could not by any peculiarity of part or structure distinguish the one from the other. Again, let all the viscera of two such bodies be submitted to every known test by the most accomplished surgeon or physician and they would be equally at fault. They would see similarity in structure and organs and in the relation and arrangement of parts, but no mark placed there by nature to indicate the high degree of one or the low station of the other. Indeed, the appearances revealed by such an inspection would, in many points, suggest a close and unflattering relationship to a very common domestic animal.

No natural difference then between these two land animals being discoverable, their needs, so far as the supplying and satisfaction of their wants are concerned, must be the same; and, coming into the world in the same fashion, their right to the provisions of nature to meet such wants is the same; and precisely as access to such provisions is unhindered and complete will be the health of those individuals. They must have sufficient space on the earth in which to live and move without engendering disease, with their rightful share of pure air, sunlight, and other natural accessories to health.

The Biblical story of human life being prolonged through many centuries may or may not be an exaggeration, but certain it is that the then existent conditions were most favorable to healthful living and hale longevity; but as man proceeded thence in his social, industrial, and civil evolution, coming together in more or less dense aggregations, as the manufacturing or commercial instinct perceived localities of advantage or points of strategic importance, the conditions changed for close association with fellow-craftsmen, and stable residence became a necessity where such industries were pursued.

In man's more primitive stages, land as such had only a grazing or agricultural value, but as population thickened, and handicraft employments arose and grew, and trade and travel developed, so in proportion grew the speculative or site value of land at those places which, for whatever reason determined, had been chosen as the seats of industry,

because of the competition between people at those points for convenient business and residence locations.

Naturally those who could first seize and control the land at such a place possessed a decided advantage, and could fix the terms on which others might come to live or work, and thus reaped gain, without merit or labor on their part, by taxing the necessity, industry, skill, and enterprise of their fellow-men; and, as all know, this is still going on at the present time.

The greater portion of all city inhabitants are now, as always, hand-workers; they constitute the bulk of population, and are, as a rule, dependent on their daily earnings for support. The means of an individual of this class do not permit him to occupy a very large part of the earth's surface, even if he is able to own such a space, which usually is not the case. The item of rent is one of his chief and most immediate concerns, and the premium he is forced to pay to another for the right to land and living presses constantly on his resources. Should he lose his employment and default in the rent, he is liable to eviction; and numerous coöperating causes, as sickness, decreased earning power, an increasing family, etc., all tend to force him to narrow his living space on the earth, and as this shrinks, his share of pure air and sunshine dwindles likewise, for virtually they, too, are owned by the landlord.

Such an example is only one of many that might be sketched of those suffering to-day from like causes, and where such a general state of affairs exists the genesis of plague spots is easy, for infection thrives amid uncleanness and want, darkness and damp, and soon takes on most potent forms and powers.

Bacteriologists have conclusively demonstrated by repeated laboratory tests, that varieties of bacteria, which ordinarily are beneficent to man by turning dangerous organic matter into forms suited to plant life, when placed with such matter in a dark, damp, stagnant atmosphere change their nature and become noxious to human health and life. This fully accords with the experience of physicians and sanitarians, whose observations show the development of the most dangerous diseases amid conditions of human overcrowding, the germs of which so produced may swiftly infect nearly the entire susceptible population.

The acute forms of these diseases visit most heavily infancy, childhood, and youth, but even these elements of population in the immediate disease-area, though sore distressed, do not always suffer as severely as those at a distance, for medical experience has shown that a degree of immunity to these forms of poison can be acquired, somewhat as opium and arsenic eaters and users of tobacco gain tolerance of those poisons.

What are the pains and penalties violated nature exacts and imposes for such transgressions? Let the graveyards speak—even those where the costliest monuments rise—and say how many of those buried there lived to old age, and how many reached that period unvexed by preventible disease. Let the multitudes that overcrowd every hospital, asylum, and dispensary in the land be also taken into account; and, not least of

all, the haunting sense of dread and fear in every household against the hour when infection shall stand within the door and reach with grisly hand for those least able to resist.

Herein perhaps is retributive justice to modern society, for it is worth noting that the spreading plagues of old, those, for example, springing from beleaguered cities or rising in the wake of armies, spent their principal force on grown people, sparing the young somewhat, and this explains the recuperative power shown by populations, which at times, by the accounts of conservative authorities, were more than trebly decimated. But now the swiftest blows are aimed at the young, weakening or destroying population near its sources; nor do grown people escape, all ages being exposed to the power of enfolding infections.

The seeds of disease can enter the human system by three routes, and only three, namely, through the air passages by being breathed in, as consumption and diphtheria; by being swallowed, as cholera and typhoid fever; and by inoculation through the skin or outer mucous surfaces, as hydrophobia and glanders. Some can enter in all three ways, of which the universal plague, tuberculosis, is an example.

The winged or air-borne diseases are most dangerous in civilized countries, and the great problem with sanitarians is to prevent the air becoming loaded with their germs. In a city this is impossible, when their wholesale production in certain localities goes on perpetually, and every person breathing such air becomes morbidly liable to them himself, or to carry them with him in his person or clothing to give to others.

What meant the slight fever, or malaise, or headache, or "cold" of yesterday or last week? Probably that an attack had been made upon our vital powers by the aerial enemies that compass us about, which, however, was soon and easily repulsed. But to-morrow, or next week, or next year, the forces that guard our health and lives may be weakened or caught sleeping, the citadel may be entered and a long spell of sickness follow. If it be of a communicable nature, even though developed far away from the place where it was contracted, a new danger centre to public health is created, unless the most vigilant precaution be taken to prevent the escape and diffusion of the volatile infection.

From a public health stand-point there is no place in the economy of unperverted nature for either a Dives or a Lazarus; in primitive conditions they could not exist, and under natural conditions now they would substantially disappear. The lazarets all over the world show too plainly the disposition to attempt to substitute charity for justice, but modern civilization waits on justice alone to place it upon a foundation other than human bones; for the conditions must again change to enable man to rise to high and higher development.

It would be the language of madness to say that there is not fresh air and sunlight in overflowing abundance for every human being in the world, and it would be equally foolish to say that there is not land enough on which all could live wholesomely and without danger to their neighbors. But of what use are the other gifts of nature if man cannot

get enough living-room on earth to enjoy them? What are the facts in this regard? Under the influence of present laws and social forces, the centripetal pressure is so great that population is becoming massed as never before. In the city of New York in localities where hundreds of thousands of people live, the average space of land per capita is about one square yard, exclusive of street and other common areas, and other cities are fast following in the same path. This continuous dense massing together of human beings equals probably anything that occurred in past ages in time of warfare and siege, when outlying populations were driven for safety within the city walls.

This is the situation which confronts the civilization of to-day. Its consequences are serious enough already, for nations have expired and civilizations have withered and passed away from causes that had their root in conditions of population now existing here; and no certain remedy is possible so long as to some men is given power to seize and hold the keys of the storehouse provided by nature, and to which all men must have access for nourishment, health, and life. Private property in land can ultimately lead to but one end, and that population disease, decay, and death. As these three have all seasons for their own, so should right-doing, restitution, living justice; and these will never be satisfied until every human land-animal, every child of man, is secure in the possession and enjoyment of every provision of nature freely supplied for the welfare of its physical body. All of these in due share are the fundamental conditions of public health—the same to-day as ever, the benefaction of nature, and the birthright of man.

